

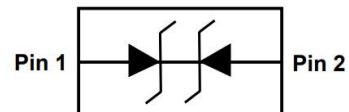
SSCE5V052N1

Ultra-low Capacitance Bidirectional Micro Packaged TVS Diodes for ESD Protection

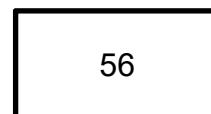
● **Description**

The SSCE5V052N1 is designed with Punch-Through process TVS technology to protect voltage sensitive components from ESD. Excellent clamping capability, low leakage, and fast response time provide best in class protection on designs that are exposed to ESD. Because of its small size, it is suited for use in cellular phones, MP3 players, digital cameras and many other portable applications where board space comes at a premium. Also because of its low capacitance, it is suited for use in high frequency designs such as USB 2.0 high speed, USB 3.0 super speed, VGA, DVI, HDMI, ESATA and other high speed line applications.

● **PIN configuration**



Top view



Marking

● **Feature**

- ◊ 30W peak pulse power ($t_p = 8/20\mu s$)
- ◊ DFN1006-2L Package
- ◊ Working voltage: 5V
- ◊ Low clamping voltage
- ◊ Low capacitance
- ◊ Low leakage current
- ◊ RoHS compliant transient protection for high speed data lines to IEC61000-4-2(ESD) $\pm 20kV$ (air), $\pm 20kV$ (contact)

● **Applications**

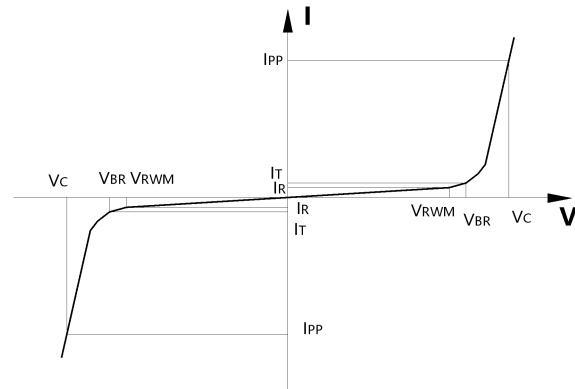
- ◊ DVI & HDMI Port Protection
- ◊ Serial and Parallel Ports
- ◊ Projection TV
- ◊ Notebooks, Desktops, Servers
- ◊ Portable instrumentation

● **Mechanical data**

- ◊ Lead finish:100% matte Sn(Tin)
- ◊ Mounting position: Any
- ◊ Qualified max reflow temperature:260°C
- ◊ Device meets MSL 3 requirements
- ◊ Pure tin plating: 7 ~ 17 um
- ◊ Pin flatness: ≤ 3 mil

- **Electronic Parameter**

Symbol	Parameter
V_{RWM}	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
P_{PP}	Peak Pulse Power
C_J	Junction Capacitance



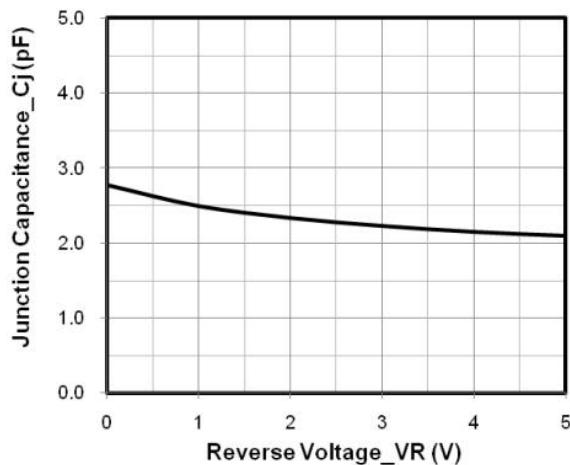
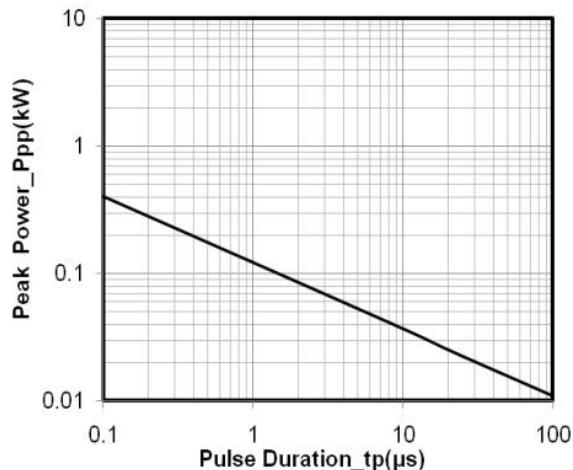
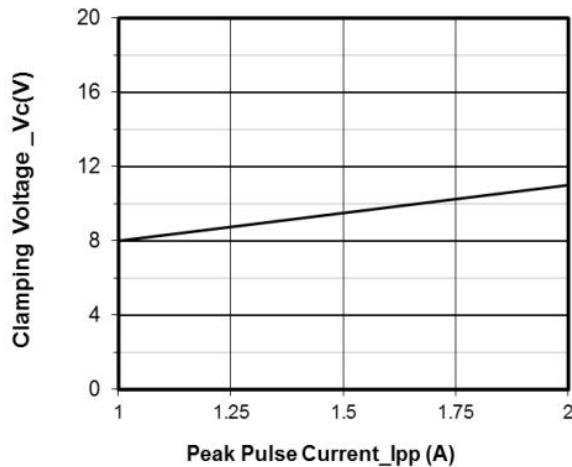
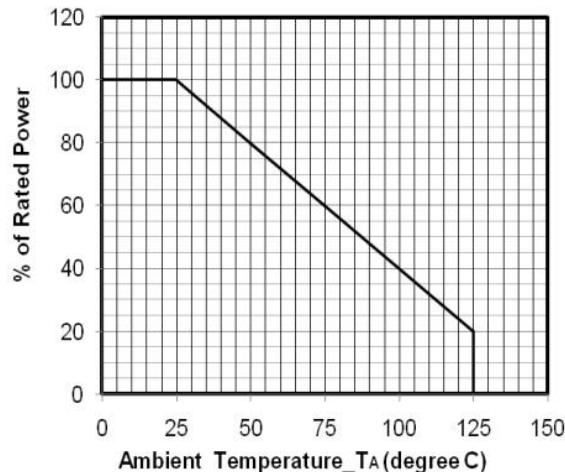
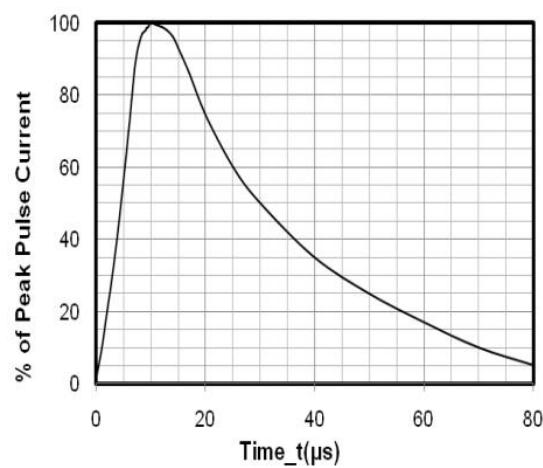
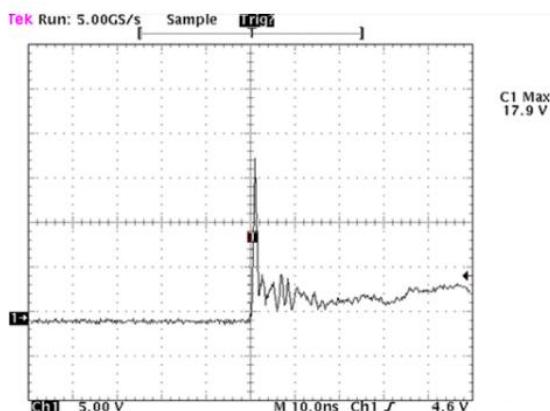
- **Absolute maximum rating @ $T_A=25^\circ C$**

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	P_{PP}	30	W
Peak Pulse Current (8/20μs)	I_{PP}	2	A
ESD Rating per IEC61000-4-2: Contact Air	V_{ESD}	20 20	kV
Storage Temperature	T_{STG}	-55/+150	°C
Operating Temperature	T_J	-55/+125	°C

- **Electrical Characteristics @ $T_A=25^\circ C$**

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Peak Reverse Working Voltage	V_{RWM}				5	V
Breakdown Voltage	V_{BR}	$I_T = 1mA$	6			V
Reverse Leakage Current	I_R	$V_{RWM} = 5V$			1	μA
Clamping Voltage	V_C	$I_{PP} = 1A, t_P = 8/20μs$			10	V
Clamping Voltage	V_C	$I_{PP}=2A, t_P = 8/20μs$			14	V
Junction Capacitance	C_J	$V_R=0V, f = 1MHz$		2	3	pF

- Typical Performance Characteristics


Junction Capacitance vs. Reverse Voltage

Peak Pulse Power vs. Pulse Time

Clamping Voltage vs. Peak Pulse Current ($t_p = 8/20\mu$ s)

Power Derating Curve

8 X 20 μ s Pulse Waveform

Note: Data is taken with a 10x attenuator
ESD Clamping Voltage
+8 kV Contact per IEC61000-4-2

● Package Information

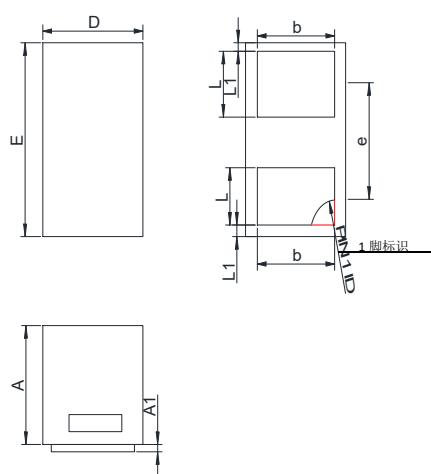
Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCE5V052N1	DFN1006-2L	10000	7 Inch

Mechanical Data

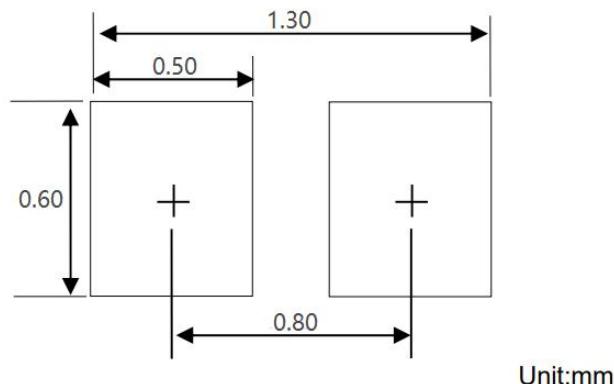
Case:DFN1006-2L

Case Material: Molded Plastic. UL Flammability



DIM	Millimeters	
	Min	Max
A	0.43	0.55
A1	0.00	0.05
D	0.55	0.65
E	0.95	1.05
b	0.45	0.60
e	0.65TYP	
L	0.2	0.3
L1	0.05REF	

Recommended Pad outline



**DISCLAIMER**

SSCSEMI RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. SSCSEMI DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENCE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

THE GRAPHS PROVIDED IN THIS DOCUMENT ARE STATISTICAL SUMMARIES BASED ON A LIMITED NUMBER OF SAMPLES AND ARE PROVIDED FOR INFORMATIONAL PURPOSE ONLY. THE PERFORMANCE CHARACTERISTICS LISTED IN THEM ARE NOT TESTED OR GUARANTEED. IN SOME GRAPHS, THE DATA PRESENTED MAY BE OUTSIDE THE SPECIFIED OPERATING RANGE (E.G., OUTSIDE SPECIFIED POWER SUPPLY RANGE) AND THEREFORE OUTSIDE THE WARRANTED RANGE.

OUR PRODUCT SPECIFICATIONS ARE ONLY VALID IF OBTAINED THROUGH THE COMPANY'S OFFICIAL WEBSITE, CRM SYSTEM, OR OUR SALES PERSONNEL CHANNELS. IF CHANGES OR SPECIAL VERSIONS ARE INVOLVED, THEY MUST BE STAMPED WITH A QUALITY SEAL AND MARKED WITH A SPECIAL VERSION NUMBER TO BE VALID.